the roller 14. These bearings are all rotatably mounted on the shaft 18 and allow the permanent magnet 10 along with the roller 14 to which it is affixed to rotate relatively to the fixed shaft 18 while maintaining the air gap 19 between the inner surface of the magnets and the outer periphery of toothed member 16. Conductors 37 are disposed in a passageway 36 in the shaft 18, including three phase conductors to provide power to the stator coils 15 from an external power source.

IN THE CLAIMS:

Please amend claims 13, 14 and 16 and please add new claim 23 as follows:

13. (Amended) A motor for driving a cylindrical conveyor roller that rotates around a stationary shaft, said conveyor roller having a first end and a second end, the motor comprising:

a cylindrical rotor disposed inside of and mounted to rotate with said cylindrical roller around said stationary shaft;

wherein said rotor is formed of a plurality of longitudinal segments of permanent magnetic material, wherein said segments alternate orientation of north-south magnetic polarity in a radial direction to produce flux in flux path loops connecting pairs of the longitudinal segments;

a plurality of stator coils mounted on said shaft for receiving current from an external power supply that commutates current in said stator coils;

wherein said motor is a brushless d.c. motor;

further comprising a cylindrical metal rotor housing forming a part of the rotor for receiving the segments of permanent magnetic material and for supporting the shaft and the stator coils in a motor assembly;

wherein said motor assembly, including said cylindrical metal rotor housing, is disposed inside of and secured to said roller to rotate with the roller;

wherein said motor is supported by two spaced apart bearings which space the rotor from the stator to form an air gap; and

wherein a first one of said bearings is proximate the first end of the conveyor roller and wherein a second one of said bearings is spaced a distance away from said first one of said bearings to provide the air gap for spacing the rotor from the stator.

14. (Amended) A motor for driving a cylindrical conveyor roller that rotates around a stationary shaft, said conveyor roller having a first end and a second end, the motor comprising:

a cylindrical rotor disposed inside of and mounted to rotate with said cylindrical roller around said stationary shaft;

wherein said rotor is formed of a plurality of longitudinal segments of permanent magnetic material, wherein said segments alternate orientation of north-south magnetic polarity in a radial direction to produce flux in flux path loops connecting pairs of the longitudinal segments;

a plurality of stator coils mounted on said shaft for receiving current from an external power supply that commutates current in said stator coils;

wherein said motor is a brushless d.c. motor;

further comprising a cylindrical metal rotor housing forming a part of the rotor for receiving the segments of permanent magnetic material and for supporting the shaft and the stator coils in a motor assembly;

wherein said motor assembly, including said cylindrical metal rotor housing, is disposed inside of and secured to said roller to rotate with the roller;

wherein said motor is supported by two spaced apart bearings which space the rotor from the stator to form an air gap; and

wherein a first one of said bearings is proximate the first end of the conveyor roller and wherein a second one of said bearings is spaced a distance away from said first one of said bearings to provide the air gap for spacing the rotor from the stator, and

wherein said conveyor roller extends beyond said second one of said bearings and to a greater length than the